

IN THE CLAIMS

Please amend the claims as indicated below:

CLAIM 1. [Cancelled]

CLAIM 2. [Currently Amended] The worm/worm gear assembly of claim 6~~1~~ wherein each of said teeth of the worm includes a first flank surface and an opposing second flank surface, and wherein each of said teeth of said worm gear includes a first flank surface and an opposing second flank surface, said outboard mechanical double flank communication being maintained such that contact is made between said first flank surface of at least one of said teeth of said worm and said first flank surface of at least one of said teeth of said worm gear, and such that contact is made between said opposing second flank surface of said at least one of said teeth of said worm and a flank surface facing said first flank surface of said at least one tooth of said worm gear on a successive tooth of said worm gear.

CLAIM 3. [Original] The worm/worm gear assembly of claim 2 wherein the contact made between said first flank surface of at least one of said teeth of said worm and said first flank surface of at least one of said teeth of said worm gear is at opposing outer edges of said worm and said worm gear, and wherein the contact made between said opposing second flank of said at least one of said teeth of said worm and said flank surface facing said first flank surface of said at least one tooth of said worm gear on said successive tooth of said worm gear is at said opposing outer edges of said worm and said worm gear.

CLAIM 4. [Cancelled]

CLAIM 5. [Currently Amended] The worm/worm gear assembly of claim 6~~1~~[~~1~~] wherein said flank surfaces of each of said teeth of said worm gear are concavely arcuately formed to substantially correspond with said convexly arcuately formed flank surfaces of each of said teeth of said worm.

CLAIM 6. [Currently Amended] A worm/worm gear assembly, comprising: The worm/worm gear assembly of claim 1

a worm having a plurality of teeth defined by at least one thread disposed thereon, wherein flank surfaces of each of said teeth of said worm are convexly arcuately formed; and

a single part worm gear having a plurality of uninterrupted teeth flexibly disposed thereon, said teeth of said worm gear being disposed in outboard mechanical double flank communication with said teeth of said worm,

wherein a helix-lead angle of said worm is less than a helix angle of said worm gear.

CLAIM 7. [Currently Amended] The worm/worm gear assembly of claim 6 wherein said helix-lead angle of said worm is less than said helix angle of said worm gear by about 0.5 degrees to about 2.0 degrees.

CLAIM 8. [Original] The worm/worm gear assembly of claim 2 wherein a compressive relationship is maintained between said worm and said worm gear.

CLAIM 9. [Currently Amended] The worm/worm gear assembly of claim 2 wherein said leadhelix angle of said worm is skewed relative to said helix angle of said worm gear.

CLAIM 10. [Original] The worm/worm gear assembly of claim 2 wherein an axis of rotation of said worm gear is skewed relative to an axis of rotation of said worm.

CLAIM 11. [Currently Amended] The worm/worm gear assembly of claim 6+ wherein at least one of said worm and said worm gear are fabricated from a resilient material.

CLAIM 12. [Original] The worm/worm gear assembly of claim 2 wherein the contact maintained between said first flank surface of at least one of said teeth of said worm and said first flank surface of at least one of said teeth of said worm gear extends from opposing outer edges of said worm and said worm gear to a point intermediate opposing outer edges of said worm and said worm gear, and wherein the contact maintained between said opposing second flank of said at least one of said teeth of said worm and said flank surface facing said first flank surface of said at least one tooth of said worm gear on said successive tooth of said worm gear extends from opposing outer edges of said worm and said worm gear to a point intermediate said opposing outer edges of said worm and said worm gear.

CLAIM 13. [Canceled]

CLAIM 14. [Original] The worm/worm gear assembly of claim 13 wherein said flank surfaces of each of said teeth of said worm gear are concavely arcuately formed to substantially correspond with said flank surfaces of each of said teeth of said worm.

CLAIM 15. [Cancelled]

CLAIM 16. [Currently Amended] The worm/worm gear assembly of claim 12+5 wherein said lead~~helix~~ angle of said worm is less than said helix angle of said worm gear by about 0.5 degrees to about 2.0 degrees.

CLAIM 17. [Original] The worm/worm gear assembly of claim 12 wherein a compressive relationship is maintained between said worm and said worm gear.

CLAIM 18. [Currently Amended] The worm/worm gear assembly of claim 12 wherein said lead~~helix~~ angle of said worm is skewed relative to said helix angle of said worm gear.

CLAIM 19. [Original] The worm/worm gear assembly of claim 12 wherein an axis of rotation of said worm gear is skewed relative to an axis of rotation of said worm.

CLAIM 20. [Previously Presented] The worm/worm gear assembly of claim 12 wherein at least one of said worm and said worm gear are fabricated from a resilient material.

CLAIM 21. [Original] The worm/worm gear assembly of claim 12 wherein said worm/worm gear assembly is reversibly operable.

CLAIM 22. [Previously Presented] A worm/worm gear assembly, comprising:
a worm having gear teeth , wherein flank surfaces of each of said gear teeth of said worm are convexly arcuately formed; and
a worm gear maintained in double flank contact with said worm and wherein a no-load or a low-load condition is carried at a low spring rate and a higher load condition is carried at a higher spring rate.

CLAIM 23. [Original] The worm/worm gear assembly of claim 22 further comprising lower load contact areas in first locations on gear teeth of said worm and said worm gear and higher load contact areas at second locations on gear teeth of said worm and said worm gear, said first location and said second location being located on a single surface of each of said gear teeth.

CLAIM 24. [Original] The worm/worm gear assembly of claim 22 wherein said spring rate increases as said load increases, said spring rate increasing in proportion to a deflection of teeth of said worm gear.

CLAIM 25. [Original] The worm/worm gear assembly of claim 22 wherein said worm and said worm gear each include a plurality of teeth, each of said teeth including a first flank surface and an opposing second flank surface, and wherein mechanical communication is maintained such that contact is made between said first flank surface of at least one of said teeth of said worm gear and said first flank surface of at least one of said teeth of said worm, and such that contact is made between said opposing second flank surface of said at least one of said teeth of said worm and a flank surface facing said first flank surface of said at least one tooth of said worm gear on a successive tooth of said worm gear.

Claim 26. [Cancelled]

CLAIM 27. [Currently Amended] The gear of claim 2934 wherein a first of said arcuately-formed flank surfaces on said tooth of said gear is configured and positionable to engage a first flank surface of a tooth on a mating gear, and wherein a first arcuately-formed facing flank surface on a successive tooth of said gear is configured and positionable to engage a second opposing flank surface of a tooth on said mating gear that is successive to said first tooth on said mating gear.

CLAIM 28. [Cancelled]

CLAIM 29. [Currently Amended] A single part gear capable of reducing backlash, comprising: a plurality of teeth disposed on an outer edge thereof, each tooth of said plurality of teeth having two arcuately-formed flank surfaces, said flank surfaces being arcuately-formed across a width of each tooth of said gear, said gear being efficiently operable under load conditions, and said gear being configured to be run in double flank contact with a worm. The gear of claim 34 wherein said arcuately-formed flank surfaces are convex relative to said tooth.

CLAIM 30. [Currently Amended] The gear of claim 2934 wherein each of said arcuately-formed flank surfaces is uninterrupted.

CLAIM 31. [Cancelled]

CLAIM 32. [Cancelled]

CLAIM 33. [Currently Amended] The operable worm gear of claim 362 wherein each tooth of said plurality of teeth includes continuous flank surfaces.

CLAIM 34. [Cancelled]

CLAIM 35. [Cancelled]

CLAIM 36. [Currently Amended] An operable worm gear efficient at no- or low-load conditions and at higher load conditions such that double flank meshing contact is maintained between said operable worm gear and a worm to eliminate backlash between said operable worm gear and said worm, said operable worm gear comprising:

a body portion; and
a plurality of teeth disposed on said body portion, each tooth of said plurality of teeth being formed of a resilient material, wherein said each tooth is concavely-formed relative to said each tooth of said plurality of teeth, wherein said plurality of teeth are flexibly disposed on said body portion, The operable worm gear of claim 35 wherein each tooth of said plurality of teeth has a spring rate associated therewith, said spring rate increasing with increasing deflection of each tooth of said plurality of teeth.

CLAIM 37. [Previously Presented] The operable worm gear of claim 36 wherein said spring rate is variably dependent upon at least one of a helical angle of a helical thread forming said plurality of teeth and the concavity of each of said teeth of said plurality of teeth.

CLAIM 38. [Currently Amended] A worm/worm gear assembly, comprising:

a worm; and

a worm gear, said worm gear being engaged in double flank contact with said worm, teeth of one of said worm and said worm gear are concavely-formed relative to each tooth of a plurality of teeth defining said one of said worm and said worm gear such that a first contact area between a tooth of said worm and a tooth of said worm gear is smaller in size at a low load condition than a second contact area is at a higher load condition, and such that said first contact area at said low-load condition increases to form said second contact area at said higher load condition, wherein a lead angle of said worm is less than a helix angle of said worm gear.

CLAIM 39. [Currently Amended] A worm/worm gear assembly, comprising:

a worm having at least one helical tooth, wherein flank surfaces of each of said at least one helical tooth is convexly arcuately formed; and

a flexible helical cut worm gear, in double flank contact with said worm, and wherein a leadhelix angle of said worm helical tooth is less than a helix angle of said helical cut worm gear.

CLAIM 40. [Cancelled]

CLAIM 41. [Cancelled]

CLAIM 42. [Cancelled]

CLAIM 43. [Currently Amended] A method of delashing a gear system, comprising:

disposing a worm in compressive mechanical communication with

a worm gear, wherein flank surfaces of each tooth of a plurality of teeth on said worm

gear are concavely arcuately formed relative to each tooth of a plurality of teeth defining

said worm gear; and

maintaining double flank contact at opposing edges of facing successive worm gear teeth such that during low- or no-load conditions, said double flank contact is maintained between teeth of said worm and said worm gear at outer edges of each of said facing successive worm gear teeth and during higher load conditions said double flank contact extends toward the center of each of said facing successive worm gear teeth, wherein said disposing of said worm in compressive mechanical communication with said worm gear comprises biasing said worm and said worm gear together and~~The method of claim 41 further comprising~~ skewing a helix angle of said worm gear.

CLAIM 44. [Currently Amended] A method of delashing a gear system, comprising:
disposing a worm in compressive mechanical communication with a worm gear, wherein flank surfaces of each tooth of a plurality of teeth on said worm gear are concavely arcuately formed relative to each tooth of a plurality of teeth defining said worm gear; and

maintaining double flank contact at opposing edges of facing successive worm gear teeth such that during low- or no-load conditions, said double flank contact is maintained between teeth of said worm and said worm gear at outer edges of each of said facing successive worm gear teeth and during higher load conditions said double flank contact extends toward the center of each of said facing successive worm gear teeth, wherein said disposing of said worm in compressive mechanical communication with said worm gear comprises biasing said worm and said worm gear together and~~The method of claim 41 further comprising~~ skewing an axis of said worm gear relative to an axis of said worm.

CLAIM 45. [Cancelled]

CLAIM 46. [Currently Amended] A worm/worm gear assembly, comprising:
a worm having a plurality of teeth defined by at least one thread disposed thereon, each of said teeth of said worm including a first flank surface and an

opposing second flank surface, wherein said flank surfaces of each of said teeth of said worm are convexly arcuately formed; and

a single part worm gear having a plurality of uninterrupted teeth flexibly disposed thereon, said teeth of said worm gear being disposed in outboard mechanical double flank communication with said teeth of said worm, each of said teeth of said worm gear including a first flank surface and an opposing second flank surface, said flank surfaces of said worm gear being concavely arcuately formed, said mechanical communication being maintained such that contact between said teeth of said worm and said worm gear is maintained at opposing outer edges of said teeth and extends to a point intermediate said opposing outer edges of said teeth,

wherein a lead angle of said worm is less than a helix angle of said worm gear.